

FORM PTO-1390		U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 2923-775
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371			U.S. Application No. (if known) 10/591,714
INTERNATIONAL APPLICATION NO. PCT/EP2005/002255	INTERNATIONAL FILING DATE March 3, 2005	PRIORITY DATE CLAIMED March 6, 2004 & January 27, 2005	
TITLE OF INVENTION CHEMICALLY STABLE SOLID LITHIUM ION CONDUCTOR			
APPLICANT(S) FOR DO/EO/US Werner WEPPNER, Venkataraman THANGADURAI			
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:			
<ol style="list-style-type: none"> 1. <input type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371 2. <input checked="" type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a submission under 35 U.S.C. 371. 3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below. 4. <input type="checkbox"/> The US has been elected (Article 31). 5. <input type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> a. <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau). b. <input type="checkbox"/> has been communicated by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US) 6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)). <ol style="list-style-type: none"> a. <input type="checkbox"/> is attached hereto. b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4). 7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau). b. <input type="checkbox"/> have been communicated by the International Bureau. c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. d. <input type="checkbox"/> have not been made and will not be made. 8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). 9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). 			
ITEMS 11. TO 20. below concern other document(s) or information included:			
<ol style="list-style-type: none"> 11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input type="checkbox"/> A preliminary amendment. 14. <input type="checkbox"/> An Application Data Sheet under 37 CFR 1.76. 15. <input type="checkbox"/> A substitute specification. 16. <input type="checkbox"/> A power of attorney and/or change of address letter. 17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821-1.825 18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4). 19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4). 			

U.S. APPLICATION NO. (If known) 10/591,714	INTERNATIONAL APPLICATION NO. PCT/JP2005/002255	ATTORNEY DOCKET NO. 2923-775																
20. <input checked="" type="checkbox"/> Other items or information: [x] IB/373 [x] ISA/237 [] ISA/210(ISR) [] IB/301 [] IB/304 [] IB/308 [] IB 401 [] IB/409(IPER) [] IB/416 [] Published Application WO/																		
21. The following fees are submitted: <input type="checkbox"/> Basic National Fee \$300.00	CALCULATIONS \$	PTO USE ONLY																
22. <input type="checkbox"/> Examination Fee If the written opinion prepared by ISA/US or the IPER prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4) \$0 All other situations \$200.00	\$																	
23. <input type="checkbox"/> Search Fee If the written opinion of the ISA/US or the IPER prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4) \$0 Search fee (37 CFR 1.445(a)(2)) has been paid on the international application to the USPTO as an International Search Authority \$100.00 International Search Report prepared by an ISA other than the US and provided to the Office or previously communicated to the US by the IB \$400.00 All other situations \$500.00	\$																	
TOTAL OF 21, 22 AND 23 =	\$																	
<input type="checkbox"/> Additional fee for specification and drawings filed in paper over 100 (excluding sequence listing or computer program listing filed in an electronic medium). The fee is \$250.00 for each additional 50 sheets of paper or fraction thereof.	\$																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">Total Sheets</th> <th style="width: 15%;">Extra Sheets</th> <th style="width: 40%;">Number of each additional 50 or fraction thereof</th> <th style="width: 30%;">Rate</th> </tr> <tr> <td style="text-align: center;">- 100 =</td> <td style="text-align: center;">/ 50 =</td> <td></td> <td style="text-align: center;">x 250</td> </tr> </table>	Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Rate	- 100 =	/ 50 =		x 250	\$									
Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Rate															
- 100 =	/ 50 =		x 250															
Surcharge of \$130.00 for furnishing any of the search fee, examination fee, or the oath or declaration after the date of commencement of the national stage (37 CFR 1.492(h)).	\$																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">Claims</th> <th style="width: 15%;">Number Filed</th> <th style="width: 40%;">Number Extra</th> <th style="width: 30%;">Rate</th> </tr> <tr> <td>Total Claims</td> <td style="text-align: center;">-20 =</td> <td></td> <td style="text-align: center;">X \$50.00</td> </tr> <tr> <td>Independent Claims</td> <td style="text-align: center;">- 3 =</td> <td></td> <td style="text-align: center;">X \$200.00</td> </tr> <tr> <td colspan="3">Multiple dependent claim(s) (if applicable)</td> <td style="text-align: center;">+ \$360.00</td> </tr> </table>	Claims	Number Filed	Number Extra	Rate	Total Claims	-20 =		X \$50.00	Independent Claims	- 3 =		X \$200.00	Multiple dependent claim(s) (if applicable)			+ \$360.00	\$	
Claims	Number Filed	Number Extra	Rate															
Total Claims	-20 =		X \$50.00															
Independent Claims	- 3 =		X \$200.00															
Multiple dependent claim(s) (if applicable)			+ \$360.00															
TOTAL OF ABOVE CALCULATIONS =	\$																	
<input type="checkbox"/> Applicant claims small entity status. The fees indicated above are reduced by 1/2.	\$																	
SUBTOTAL =	\$																	
Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).	\$																	
TOTAL NATIONAL FEE =	\$																	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property	\$																	
TOTAL FEES ENCLOSED =	\$																	
	Amount to be refunded	\$																
	Amount to be charged	\$																

U.S. APPLICATION NO. (If known) 10/591,714	INTERNATIONAL APPLICATION NO. MARCH 3, 2005	ATTORNEY DOCKET NO. 2923-775
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a. ☐ A check in the amount of \$_____ to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. 02-2135 in the amount of \$_____ to cover the above fees.
A duplicate copy of this sheet is enclosed.

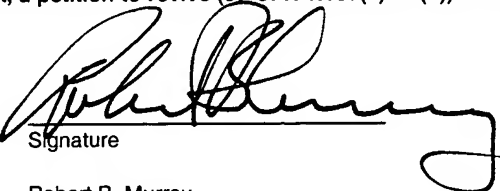
c. ☐ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 02-2135. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Customer No. 06449

Rothwell, Figg, Ernst & Manbeck
1425 K St., N.W.
Washington, D.C. 20005
Phone: 202/783-6040


Signature

Robert B. Murray
Name

22,980
Registration Number

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 34354P WO-1	FOR FURTHER ACTION	See item 4 below
International application No. PCT/EP2005/002255	International filing date (<i>day/month/year</i>) 03 March 2005 (03.03.2005)	Priority date (<i>day/month/year</i>) 06 March 2004 (06.03.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant WEPPNER, Werner		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 <i>bis</i> .1(a).																								
2.	This REPORT consists of a total of 5 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input checked="" type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

<p style="text-align: center;">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p>	<p>Date of issuance of this report 01 November 2006 (01.11.2006)</p> <p>Authorized officer Agnes Wittmann-Regis</p> <p>e-mail: pt06@wipo.int</p>
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PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing **See form PCT/ISA/210**
(day/month/year)

Applicant's or agent's file reference
34354P WO-1

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/EP2005/002255

International filing date (day/month/year)
03.03.2005

Priority date (day/month/year)
06.03.2004

International Patent Classification (IPC) or both national classification and IPC

C01 G33/00, C01 G35/00, C01 G1/02, C01 B21/082, C04B35/495, H01 M10/40, H01 M6/18, H01 M8/12, H01 B1/12

Applicant

WEPPNER, Werner

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2005/002255

Box No. 1 Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

This opinion has been established on the basis of a translation from the original language into the following language

_____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☐

in written format

☐

in computer readable form

c. time of filing/furnishing

☐

contained in the international application as filed.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2005/002255

Box No. II

Priority

1. ☐ The following document has not yet been furnished:
 - ☐ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).
 - ☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date in the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

The validity of the priority claim has not been considered because the International Searching Authority does not have in its possession a copy of the earlier application whose priority has been claimed or, where required, a translation of that earlier application. This opinion has nevertheless been established on the assumption that the relevant date (Rules 43bis.1 and 64.1) is the claimed priority date.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2005/002255

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	<u>1, 4, 7, 9, 10, 16</u>	YES
	Claims	<u>2, 3, 5, 6, 8, 11-15, 17, 18</u>	NO
Inventive step (IS)	Claims	<u>1, 4, 7, 9, 10, 16</u>	YES
	Claims	<u>2, 3, 5, 6, 8, 11-15, 17, 18</u>	NO
Industrial applicability (IA)	Claims	<u>1-18</u>	YES
	Claims	<u></u>	NO
2. Citations and explanations:			
1) Reference is made to the following documents:			
D1: THANGADURAI, VENKATARAMAN ET AL: "Novel fast lithium ion conduction in garnet-type $\text{Li}_5\text{La}_3\text{M}_2\text{O}_{12}$ (M = Nb, Ta)" JOURNAL OF THE AMERICAN CERAMIC SOCIETY, 86(3), 437-440, XP002329148			
D2: MAZZA, D.: "Remarks on a ternary phase in the lanthanum sesquioxide-metal oxide (M_2O_5)-lithium oxide system (M = Nb, Ta)" MATERIALS LETTERS, 7(5-6), 205-7, 1988, XP002329149			
2) Novelty - PCT Article 33(1) and (2)			
<p>D1 discloses $\text{Li}_5\text{La}_3\text{M}_2\text{O}_{12}$ (M = Nb, Ta) having a garnet-like structure as solid lithium ion conductor for use in, for instance, accumulators and fuel cells, for example in the form of pellets. It is prepared in a solid-state reaction of the salts of the participating elements which are mixed and subsequently heat treated, in accordance with the process in claim 15. The ion conductivity of $\text{Li}_5\text{La}_3\text{Ta}_2\text{O}_{12}$ is 3.4×10^{-6} S/cm. In view of D1, novelty can therefore not be acknowledged for claims 2, 3, 5, 6, 8, 11-13, 15, 17 and 18.</p>			
<p>D2 discloses $\text{Li}_5\text{La}_3\text{M}_2\text{O}_{12}$ having a garnet-like structure. It is prepared in a solid-state reaction of the salts of the participating elements which are mixed and subsequently heat treated. Pressing to form pellets follows. In view of D2, novelty can therefore not be acknowledged for claims 2, 3, 5, 6, 8 and 11-14.</p>			